TEST REPORT

EN 60950-1

Information Technology Equipment – Safety – Part 1: General Requirements

Test Report No.:	**L120704-01-A0**
Client	
Name :	**VIVOTEK INC.**
Address :	**6F, No.192, Lien-Cheng Rd., Chung-Ho , New Taipei City, 235, Taiwan, R.O.C.**
Test Item :	**Network Camera**
Identification :	**FE8172, FE8172V**
Testing laboratory	
Name :	**Prodigy Technology Consultant Co., Ltd.**
Address :	**No.181, Sec. 2, Wunhua 1st Rd., Linkou District, New Taipei City 244, Taiwan CHINESE TAIPEI**
Test specification	
Standard :	**EN 60950-1:2006+A11:2009+A1:2010+A12:2011**
Test Result :	**The test item passed.**
Prepared By :	Signature Frank Chang Senior Engineer 2012-08-17 Date
Approved By:	Signature Yama Cheng Deputy Manager 2012-08-17 Date

Other Aspects:

The completed test report includes the following documents:

- EN 60950-1 report (40 pages)
- National Differences (19 pages)
- Enclosures (24 pages)

ilac-MRA TAF Testing Laboratory 1842

TEST REPORT EN 60950-1 Information Technology Equipment – Safety – Part 1: General Requirements	
Report Reference No. ..... :	L120704-01-A0
Tested by (+ signature) ..... :	See cover sheet
Approved by (+ signature)..... :	See cover sheet
Date of issue..... :	2012-08-17
Testing laboratory	
Name ..... :	Prodigy Technology Consultant Co., Ltd.
Address ..... :	No.181, Sec. 2, Wunhua 1st Rd., Linkou District, New Taipei City 244, Taiwan CHINESE TAIPEI
Testing location ..... :	Prodigy Technology Consultant Co., Ltd.
Address ..... :	No.181, Sec. 2, Wunhua 1st Rd., Linkou District, New Taipei City 244, Taiwan CHINESE TAIPEI
Applicant	
Name ..... :	VIVOTEK INC.
Address ..... :	6F, No.192, Lien-Cheng Rd., Chung-Ho , New Taipei City, 235, Taiwan, R.O.C.
Test specification	
Standard ..... :	EN 60950-1:2006+A11:2009+A1:2010+A12:2011
Test procedure ..... :	CE Marking serial in LVD
Procedure deviation ..... :	N/A
Non-standard test method..... :	N/A
Test Report Form/blank test report	
Test Report Form No. ..... :	IEC60950_1B
TRF originator. ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2010-04
Test equipment	
Description..... :	Network Camera
Trademark ..... :	VIVOTEK or VIVOTEK INC.
Manufacturer ..... :	Same as applicant.
Model and/or type reference ..... :	FE8172, FE8172V
Rating(s)……..…:	Optional, (1) 12Vdc, 0.472A; (2) 48Vdc, 0.12A (for PoE)

Summary of Testing: Unless otherwise indicated, all tests were conducted at Prodigy Technology Consultant Co., Ltd. No.181, Sec. 2, Wunhua 1st Rd., Linkou District, New Taipei City 244, Taiwan CHINESE TAIPEI.	
Tests performed (name of test and test clause)	**Testing location / Comments**
End Product Reference Page	
General Guidelines	
1.6.2 - Input Test: Single-Phase	
2.2.2, 2.2.3, 2.2.4, Part 22 6.1 - Selv Reliability Test Including Hazardous Voltage Measurements	
2.5 - Limited Power Source Measurements	
4.2.1 - 4.2.4 - Steady Force Tests	
4.2.5, 4.2.1, Part 22 10.2 - Impact Test	
4.2.10 - Loading Tests – Wall And Ceiling Mounted Equipment	
4.5.1, 1.4.12, 1.4.13 - Heating Test	

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks. (Additional requirements for markings. See 1.7 NOTE)

Particulars: test item vs. test requirements		
Equipment mobility	:	fixed
Operating condition	:	Continuous
Mains supply tolerance (%)		No direct connection
Tested for IT power systems	:	No
IT testing, phase-phase voltage (V)	:	N/A
Class of equipment	:	Class III
Mass of equipment (kg)	:	0.07Kg (Wall mount kit only), 0.59Kg (FE8172V with wall mount kit), 0.41Kg (FE8172 only)
Protection against ingress of water	:	IP66 (For FE8172V)
Test case verdicts		
Test case does not apply to the test object	:	N/A
Test item does meet the requirement	:	Pass
Test item does not meet the requirement	:	Fail
Testing		
Date of receipt of test item.	:	2012-06-26
Date(s) of performance of test	:	2012-07-04 to 2012-07-13

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.
The test results presented in this report relate only to the item tested.
"(see remark #)" refers to a remark appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report a point is used as the decimal separator.

Brief description of the test equipment

- The equipment is a Class III Network Camera, consists of electronic components mounted on PWB and is equipped with a progressive scan CMOS sensor then housed with plastic or metal enclosure, also provides a DI/DO terminal block, and Audio port, which is used to connect external input/output devices.
- The EUT installs to the wall or celling.

- The maximum ambient temperature specified by manufacturer is 50 ^{o}C

- IP66 and EN60950-22 evulation refer to Model FE8171V (LVD CoC No. T1107110-158) as attachment (Enclosure ID 7-02), due to same enclosure construction and shape.

Model Differences

Model FE8172 is similar to model FE8172V, expect enclsoure construction, FE8172 plastic enclosure for indoor use, FE8172V metal enclosure for outdoor use, and model designation.

Additional Information

N/A

Factory Location(s):

VIVOTEK INC.
5F, No.168, Lien-Cheng Rd., Chung-Ho , New Taipei City, 235, Taiwan, R.O.C.

Test condition

Temperature: 25°C
Relative humidity: 60%
Air pressure: 950 mbar

The test samples are pre-production without serial numbers.

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		Pass
1.5	**Components**		Pass
1.5.1	General	See below.	Pass
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1 for details.)	Pass
1.5.2	Evaluation and testing of components	- Components certified to IEC harmonized standard and checked for correct application. - Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1. - Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors bridging insulation	Class III equipment.	N/A
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Class III equipment.	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict

1.6	**Power interface**		Pass
1.6.1	AC power distribution systems ..... :	Class III equipment.	N/A
1.6.2	Input current	The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under normal load See appended table 1.6.2 for details	Pass
1.6.3	Voltage limit of hand-held equipment	The unit is not a hand-held equipment.	N/A
1.6.4	Neutral conductor	Class III equipment.	N/A

1.7	**Marking and instructions**		Pass
1.7.1	Power rating and identification markings	Rating marking readily visible to operator. (Optional)	Pass
1.7.1.1	Power rating marking		Pass
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	Optional, (1) 12Vdc (2) 48Vdc (for PoE)	Pass
	Symbol for nature of supply, for d.c. only ..... :	(Optional) ⎓ (60417-2-IEC-5031) for 12Vdc and 48Vdc	Pass
	Rated frequency or frequency range (Hz) ..... :		N/A
	Rated current (mA or A) ..... :	Optional, (1) 0.472A; (2) 0.12A (for PoE)	Pass
1.7.1.2	Identification markings		Pass
	Manufacturer's name or trade-mark or identification mark ..... :	Manufacturer: VIVOTEK INC or Trademark: VIVOTEK	Pass
	Model identification or type reference ..... :	FE8172, FE8172V	Pass
	Symbol for Class II equipment only ..... :	Class III equipment.	N/A
	Other markings and symbols ..... :	Additional markings are used and are defined in the installation instructions.	N/A
1.7.2	Safety instructions and marking	Operating/safety instructions made available to the user.	Pass

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	General	Safety instructions in English. Other languages will be provided when submitted for national approval. - The Safety instructions may be forming by a hard copy format, website or CD-ROM.	Pass
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles	Continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :		N/A
	Methods and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment ..... :	No power outlets	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :		N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		Pass
1.7.8.1	Identification, location and marking ..... :	No indicators, switches and other controls affecting safety provided.	Pass
1.7.8.2	Colours ..... :	Only functional indicators use color.	Pass
1.7.8.3	Symbols according to IEC 60417 ..... :		N/A
1.7.8.4	Markings using figures ..... :		N/A
1.7.9	Isolation of multiple power sources ..... :		N/A
1.7.10	Thermostats and other regulating devices ..... :		N/A
1.7.11	Durability	Comply with the durability test	Pass
1.7.12	Removable parts	No marking is located on a removable parts.	N/A
1.7.13	Replaceable batteries ..... :		N/A
	Language(s) ..... :		--
1.7.14	Equipment for restricted access locations ..... :		N/A

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict
2	**PROTECTION FROM HAZARDS**		Pass
2.1	**Protection from electric shock and energy hazards**		Pass
2.1.1	Protection in operator access areas		Pass
2.1.1.1	Access to energized parts	Class III equipment; no operator access to energized parts.	Pass
	Test by inspection ..... :	The operator has access only to bare parts of SELV Circuits	Pass
	Test with test finger (Figure 2A) ..... :		Pass
	Test with test pin (Figure 2B) ..... :		Pass
	Test with test probe (Figure 2C) ..... :	No TNV circuit.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No accessible hazardous voltage circuit wirings.	N/A
2.1.1.5	Energy hazards ..... :	No energy hazard in operator access area.	N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Measured voltage (V); time-constant (s) ..... :		—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply . :		N/A
	b) Internal battery connected to the d.c. mains supply ..... :		N/A
2.1.1.9	Audio amplifiers ..... :	No Audio amplifier.	N/A
2.1.2	Protection in service access areas		Pass
2.1.3	Protection in restricted access locations	No restricted access location.	N/A
2.2	**SELV circuits**		Pass
2.2.1	General requirements	The unit intended to be supplied by SELV.	Pass
2.2.2	Voltages under normal conditions (V) ..... :	All accessible voltage are less than 42.4Vp or 60Vdc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V)..... :		Pass

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict
2.2.4	Connection of SELV circuits to other circuits..... :	SELV circuits are only connected to other SELV circuit.	Pass
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuit.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) ..... :		—
	Measured current (mA)..... :		—
	Measured voltage (V) ..... :		—
	Measured capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		Pass
	a) Inherently limited output	See appended table 2.5 for details.	Pass
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	See appended table 2.5 for details.	Pass
	d) Overcurrent protective device limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....	See appended table 2.5 for details.	—
	Current rating of overcurrent protective device (A)		—
	Use of integrated circuit (IC) current limiters		—
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing	Class III equipment.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG..... :		—
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :		N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		—
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements	Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices .....:		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlocks provided.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test (V)		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		Pass
2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used.	N/A
2.9.2	Humidity conditioning	Class III equipment.	N/A
	Relative humidity (%), temperature (°C) .....:		—
2.9.3	Grade of insulation	Functional insulation only.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.4	Separation from hazardous voltages	Evaluated at R/C Adapter.	N/A
	Method(s) used ..... :		—
2.10	**Clearances, creepage distances and distances through insulation**		Pass
2.10.1	General	See below.	Pass
2.10.1.1	Frequency		N/A
2.10.1.2	Pollution degrees	Pollution degree 2 applicable	Pass
2.10.1.3	Reduced values for functional insulation		Pass
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage	Class III equipment.	N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances	Class III product - secondary circuits comply with Sub clause 5.3.4. Function insulation.(See appended table 2.10.3and 2.10.4).	Pass
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply		N/A
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits	Functional insulation.	Pass
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply		N/A
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network .		N/A
2.10.4	Creepage distances	Functional insulation	Pass
2.10.4.1	General		Pass
2.10.4.2	Material group and comparative tracking index		Pass
	CTI tests.....	Material group IIIb; 100 <= CTI <175.	—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		Pass
2.10.6.1	Uncoated printed boards		Pass
2.10.6.2	Coated printed boards	No special coating is used.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		Pass
3.1	**General**		Pass
3.1.1	Current rating and overcurrent protection	All wires/conductors possess adequate cross-sectional areas for their intended application and internal wiring are adequately insulated.	Pass
3.1.2	Protection against mechanical damage	The wires are well routed away from sharp edges , etc. and are adequately fixed to prevent excessive strain on wire and terminals	Pass

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor.	Pass
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltages involved.	Pass
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	Pass
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		Pass
	10 N pull test		Pass
3.1.10	Sleeving on wiring		N/A
3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection	No direct connection to mains supply.	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC Power supply cords		N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:	.	—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict

3.2.8	Cord guards		N/A
	D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm).....:		—
3.2.9	Supply wiring space		N/A

3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Class III equipment.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2).....:		—
3.3.5	Wiring terminals sizes		N/A
	Rated current (A), type, nominal thread diameter (mm).....:		—
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Standard wire		N/A

3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement	Class III equipment.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energised		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	**Interconnection of equipment**		Pass
3.5.1	General requirements		Pass

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Clause	Requirement + Test	Result - Remark	Verdict

3.5.2	Types of interconnection circuits ..... :	Interconnection circuits are SELV	Pass
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N/A
3.5.4	Data ports for additional equipment	Complied with LPS, See table 2.5 for details.	Pass

4	**PHYSICAL REQUIREMENTS**	Pass

4.1	**Stability**		N/A
	Angle of 10°	fixed equipment	N/A
	Test: force (N) ..... :	Not floor standing equipment.	N/A

4.2	**Mechanical strength**		Pass
4.2.1	General		Pass
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazard.	Pass
4.2.5	Impact test	No hazard.	Pass
	Fall test		Pass
	Swing test		N/A
4.2.6	Drop test; height (mm) .....:		N/A
4.2.7	Stress relief		N/A
4.2.8	Cathode ray tubes	No CRT provided.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	No high pressure lamp provided.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ...:	Mounting means withstands three times unit weight, Force applied: 50N.	Pass
4.2.11	Rotating solid media		N/A
	Test to cover on the door……:		N/A

4.3	**Design and construction**		Pass
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		Pass
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment	No heating element.	N/A
4.3.8	Batteries		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	No oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases	No liquids or gases.	N/A
4.3.12	Flammable liquids.....:	No flammable liquids.	N/A
	Quantity of liquid (l).....:		N/A
	Flash point (°C).....:		N/A
4.3.13	Radiation		Pass
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification .....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ...:		N/A
4.3.13.5	Laser (including laser diodes) and LEDs	This product contains only visible indicator LEDs (Class 1)	Pass
4.3.13.5.1	Lasers (including laser laser diodes)		N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.6	Other types .....:		N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)…..…..:		N/A
	Is considered to cause pain, not injury. b) ……..:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……:		N/A

4.5	**Thermal requirements**		Pass
4.5.1	General		Pass
4.5.2	Temperature tests	The equipment and its component parts did not attain excessive temperatures during normal operation. (see appended table 4.5)	Pass
	Normal load condition per Annex L .....:	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	--
4.5.3	Temperature limits for materials	(see appended table 4.5)	Pass
4.5.4	Touch temperature limits	(see appended table 4.5)	Pass
4.5.5	Resistance to abnormal heat .....:		N/A

4.6	**Openings in enclosures**		Pass
4.6.1	Top and side openings	No opening	Pass
	Dimensions (mm) ……..:		—
4.6.2	Bottoms of fire enclosures	No opening	Pass
	Construction of the bottom, dimensions (mm) ....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks).....:		—
4.7	**Resistance to fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
	Method 1, selection and application of components wiring and materials	See appended table 1.5.1	Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Powered by LPS, no fire enclosure needed	Pass
4.7.2.1	Parts requiring a fire enclosure		N/A
4.7.2.2	Parts not requiring a fire enclosure		Pass
4.7.3	Materials	See table 1.5.1.	Pass
4.7.3.1	General	See below.	Pass
4.7.3.2	Materials for fire enclosures	Powered by LPS, no fire enclosure needed	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	HB or better.	Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated HB or better or are mounted on a PWB rated V-1 or better	N/A
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.1	**Touch current and protective conductor current**		N/A
5.1.1	General	Class III equipment	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
	Measured protective conductor current (mA) ....:		—
	Max. allowed protective conductor current (mA) :		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks .....:		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

5.2	**Electric strength**		N/A
5.2.1	General	Class III equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.2	Test procedure		N/A
5.3	**Abnormal operating and fault conditions**		N/A
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors		N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation ..... :		N/A
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE .....:		N/A
5.3.7	Simulation of faults		N/A
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		N/A
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		N/A
6	**CONNECTION TO TELECOMMUNICATION NETWORKS** .		N/A
6.1	Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions.....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.3	**Protection of telecommunication wiring system from overheating**		N/A
	Max. output current (A) .....:		—
	Current limiting method .....:		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		N/A
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C) .....:		N/A
A.1.3	Mounting of samples.....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D .....:		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.2.1	Samples		N/A
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

B.6	Running overload test for DC motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :		N/A
B.7	Locked-rotor overload test for DC motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—

C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position .....:		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		
	Method of protection ..... .:		—
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings ..... :		—

D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**	N/A

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**	Pass

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Clause	Requirement + Test	Result - Remark	Verdict

G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply .....:		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation .....:		N/A
G.3	Determination of telecommunication network transient voltage (V) .....:		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks ...:		N/A
G.4.2	Transients from telecommunication networks ....:		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances .....:		N/A

H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used .....:		—

K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity	No thermal control.	N/A
K.2	Thermostat reliability; operating voltage (V) ……:		N/A
K.3	Thermostat endurance test; operating voltage(V):		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		Pass
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		Pass

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) ..... :		N/A
M.3.1.2	Voltage (V) ..... :		N/A
M.3.1.3	Cadence; time (s), voltage (V) ..... :		N/A
M.3.1.4	Single fault current (mA) ..... :		N/A
M.3.2	Tripping device and monitoring voltage..... :		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)..... :		N/A

N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	**ANNEX P, NORMATIVE REFERENCES**		Pass

Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	a) Preferred climatic categories .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Maximum continuous voltage .....:		N/A
	c) Pulse current .....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
	Separate test report		—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
	Separate test report		N/A
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		N/A
V.1	Introduction		N/A
V.2	TN power systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSRORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus ..... :		N/A
Y.2	Mounting of test samples ..... :		N/A
Y.3	Carbon-arc light-exposure apparatus ..... :		N/A
Y.4	Xenon-arc light exposure apparatus ..... :		N/A

Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		N/A

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		N/A

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1……..:		N/A
CC.3	Test program 2……..:		N/A

DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A

EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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Clause	Requirement - Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
01. Power Adapter (optional)	Various	Various	O/P: 12Vdc, 0.472A min. Marked with "LPS" or "Limited Power Source" or complied with "Limited Power Source" checked by inspection.	IEC 60950-1 EN 60950-1	TUV, CE
02. Metal Enclosure (For model FE8172V)	--	--	Aluminum, 1.08mm thickness minimum. Overall see Enclosure ID 4-02 for details.	--	--
02a. Plastic Enclosure (For model FE8172)	Various	Various	HB min., 1.2 mm thickness minimum. Overall see Enclosure ID 4-01 for details.	UL 94, UL746C	UL
03. Lens cover (For model FE8172V)	TEIJIN CHEMICALS LTD	L-1225Z#(f1)	HB min., 1.7 mm min., outdoor used.	UL 94, UL746C	UL
04. Wall Mount Bracket (For model FE8172V) (Optional)	--	--	Aluminum. Overall see Enclosure ID 4-03 for details.	--	--
05. PWB	--	--	V-1 or better, 105 °C	UL 796	UL
06. Transformer of PoE (T1)	Acroparts Technology Co., Ltd.	TSAB1308-251KA	105 °C, See Enclosure ID 4-06 for details.	--	--
07. O-ring (between Plastic Lens and Enclosure)	Chen Yuan Hsing Yeh Co., Ltd.	612014801G	EPDM/SILICONE rubber, HB min., 150 °C. Overall see Diagrams ID 4-04 for detail.	--	--
08. O-ring (between Upper Enclosure and Bottom Enclosure)	Chen Yuan Hsing Yeh Co., Ltd.	612014701G	EPDM/SILICONE rubber, HB min., 150 °C. Overall see Diagrams ID 4-05 for detail.	--	--
09. Rubber Seal Plug (for LAN port terminal)	Chen Yuan Hsing Yeh Co., Ltd.	GEW16-08-05SG	V-2 min., 80 °C	--	--
09a. Rubber Seal Plug (for LAN port terminal) (Alternate)	AVC Industrial Corp.	612015801G	EPDM/SILICONE, HB min., 80 °C	--	--

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
10. Rubber Stopper (for general I/O terminal) (Optional)	AVC Industrial Corp.	SPG-M16-G	V-2 min., 80 °C	--	--
11. Liquid-tight Rubber Washer (for General I/O terminal)	AVC Industrial Corp.	P-WS-PG7-A-B	EPDM/SILICONE, HB min., 80 °C	--	--
Supplementary information:--					

1.5.1	TABLE: Opto Electronic Devices	N/A
Manufacturer ..... :		
Type..... :		
Separately tested..... :		
Bridging insulation ..... :		
External creepage distance..... :		
Internal creepage distance ..... :		
Distance through insulation ..... :		
Tested under the following conditions..... :		
Input..... :		
Output..... :		
supplementary information		

IEC60950_1B			
Clause	Requirement - Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					Pass
U(V)/f(Hz)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
12Vdc	0.231	0.472	2.77	--	--	Maximum Normal Load
48Vdc (for POE)	0.067	0.12	3.21	--	--	Maximum Normal Load

Note:

Maximum Normal Load: Unit transmit video signal from RJ-45 connected to the computer and working continuously.

2.2.2	Table Hazardous Voltage (Circuit) Measurement		Pass
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Limiting component
T1 Pin1 – GND	8.2Vp	--	--
T1 Pin2 – GND	25.2Vp	--	--
T1 Pin3 – GND	62.4Vp	--	--
T1 Pin4 – GND	8.2Vp	--	--
T1 Pin6 – GND	4.1Vp	--	--
T1 Pin7 – GND	9.4Vp	--	--
T1 Pin8 – GND	--	4.0Vdc	--
U29 Pin3 – Pin1	6.8Vp	--	--
U29 Pin3 – Pin2	7.2Vp	--	--
U29 Pin4 – Pin1	7.2Vp	--	--
U29 Pin4 – Pin2	7.2Vp	--	--
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)		
T1 Pin3 – Pin8 short	3.3Vdc		
U29 Pin1 open (T1 Pin3 – Pin8 short)	0.3Vdc		
U29 Pin1 – Pin2 short (T1 Pin3 – Pin8 short)	0.3Vdc		
U29 Pin3 – Pin4 short (T1 Pin3 – Pin8 short)	0.3Vdc		
T1 Pin3 – Metal enclosure short (For outdoor only)	0.3Vdc		
Note(s): The following terminals were connected to earth: T1 Pin5			

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict

2.2.3	TABLE: SELV Reliability Test						N/A
No. Accessible Part From – To	Component No. (Voltage Limiting)	Fault	Test Voltage	Test time (Duration)	Fuse No.	Fuse Current (A)	Result Specify Maximum Vpk or V dc
--	--	--	--	--	--	--	--
Note(s):--							

2.5	TABLE: limited power source measurements					Pass
output tested	measured		single fault condition	measured value (maximum)		
	from	to		Uoc	Isc	VA
For 48Vdc						
Regulating Network						
I/O terminal Pin1	V+	V-	T1 Pin 3-Pin8 short	3.30Vdc	2.90A	3.00VA
Inherently limited						
I/O terminal Pin3	V+	V-	--	2.60Vdc	0.03A	0.01VA
I/O terminal Pin2	V+	V-	--	0Vdc	--	--
I/O terminal Pin4	V+	V-	--	0Vdc	--	--
Audio All Pins	V+	V-	--	0Vdc	--	--
For 12Vdc						
Regulating Network						
I/O terminal Pin1	V+	V-	T1 Pin 3-Pin8 short	3.30Vdc	2.90A	3.00VA
Inherently limited						
I/O terminal Pin3	V+	V-	--	2.60Vdc	0.03A	0.01VA
RJ-45 All Pins	V+	V-	--	0Vdc	--	--
I/O terminal Pin2	V+	V-	--	0Vdc	--	--
I/O terminal Pin4	V+	V-	--	0Vdc	--	--
Audio All Pins	V+	V-	--	0Vdc	--	--
Note : --						

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	**TABLE: Clearance and creepage distance measurements**					Pass
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
--	--	--	--	--	--	--
Basic/supplementary:						
--	--	--	--	--	--	--
Reinforced:						
--	--	--	--	--	--	--
Supplementary information: -- All circuits are SELV, only functional insulation required.						

4.3.8	**TABLE: Batteries**								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available.				--					--
Is it possible to install the battery in a reverse polarity position				--					--
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. specs.		Meas. current	Manuf. specs.	Meas. current	Manuf. specs.	Meas. current	Manuf. specs.
Max. current during normal condition	--	--	--	--	--	--	--	--	--
Max. A during fault condition	--	--	--	--	--	--	--	--	--
--									

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Clause	Requirement + Test	Result - Remark	Verdict

Test results:	--	Verdict
- Chemical leaks	--	N/A
- Explosion of the battery	--	N/A
- Emission of flame or expulsion of molten metal	--	N/A
- Electric strength tests of equipment after completion of tests	--	N/A
supplementary information:--		

4.5	**TABLE: Temperature rise measurements**				Pass
	test voltage (V)	See below			—
	t_{amb1} (°C)	--			—
	t_{amb2} (°C)	--			—
maximum temperature T of part/at::	T (°C)				allowed T_{max} (°C)
For Model : FE8172V	Maximum Normal Load at 48Vdc (celling)	Maximum Normal Load at 48Vdc (celling) (Shift to Tma 50°C)	Maximum Normal Load at 48Vdc (wall)	Maximum Normal Load at 48Vdc (wall) (Shift to Tma 50°C)	--
01.Ambient	29.3	50.0	29.6	50.0	--
02.PWB under U3	40.4	61.1	40.6	61.0	105
03.BT3 body	39.2	59.9	39.5	59.9	85
04.L102 coil	37.9	58.6	38.2	58.6	105
05.T1 coil	44.8	65.5	44.8	65.2	105
06.T1 core	43.3	64.0	43.5	63.9	105
07.Metal enclosure outside near bottom	33.1	53.8	33.7	54.1	70
Test duration：	1.7 hrs	1.7 hrs	1.7 hrs	1.7 hrs	--
--	Maximum Normal Load at 12Vdc (celling)	Maximum Normal Load at 12Vdc (celling) (Shift to Tma 50°C)	--	--	--
01.Ambient	28.1	50.0	--	--	--
02.PWB under U3	38.7	60.6	--	--	105
03.BT3 body	37.7	59.6	--	--	85

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Clause	Requirement + Test	Result - Remark	Verdict

04.L102 coil	39.3	61.2	--	--	105
05.T1 core	35.9	57.8	--	--	105
06.T1 coil	36.2	58.1	--	--	105
07.Metal enclosure outside near bottom	31.1	53.0	--	--	70
Test duration：	3.5 hrs	3.5 hrs	--	--	--
For Model : FE8172	Maximum Normal Load at 48Vdc (celling)	Maximum Normal Load at 48Vdc (celling) (Shift to Tma 50°C)	Maximum Normal Load at 48Vdc (wall)	Maximum Normal Load at 48Vdc (wall) (Shift to Tma 50°C)	--
01.Ambient	25.7	50.0	28.6	50.0	--
02.PWB under U3	41.5	65.8	44.4	65.8	105
03.BT3 body	39.3	63.6	42.6	64.0	85
04.L102 coil	38.1	62.4	41.2	62.6	105
05.T1 core	44.8	69.1	47.7	69.1	105
06.T1 coil	44.9	69.2	47.9	69.3	105
07.Plastic enclosure inside near T1	31.2	55.5	34.0	55.4	60
08.Plastic enclosure outside near T1	29.4	53.7	31.9	53.3	95
09.Metal enclosure outside near bottom	34.9	59.2	37.4	58.8	70
Test duration：	1.5 hrs	1.5 hrs	4.2 hrs	4.2 hrs	--
--	Maximum Normal Load at 12Vdc (celling)	Maximum Normal Load at 12Vdc (celling) (Shift to Tma 50°C)	--	--	--
01.Ambient	29.5	50.0	--	--	--
02.PWB under U3	44.3	64.8	--	--	105
03.BT3 body	42.3	62.8	--	--	85
04.L102 coil	44.6	65.1	--	--	105
05.T1 core	40.0	60.5	--	--	105
06.T1 coil	40.4	60.9	--	--	105
07.Plastic enclosure inside near T1	33.9	54.4	--	--	60
08.Plastic enclosure outside near T1	32.1	52.6	--	--	95
09.Metal enclosure outside near bottom	37.6	58.1	--	--	70

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Clause	Requirement + Test	Result - Remark	Verdict

Test duration：	1.5 hrs	1.5 hrs	--	--	--

Supplementary information:
- The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.
- With a maximum ambient temperature of 50°C.
- All values for T (°C) are re-calculated from actual ambient which the actual ambient lower than manufacturer's specification ambient temperature.
- All values for T (°C) are without re-calculated from actual ambient which the actual ambient higher than manufacturer's specification ambient temperature.

Winding components (providing safety isolation):

Other component:
- Max. temp. of 85°C (BT3)
- Max. temp. of 105°C (PCB)
- when no class of insulation is given, min. insulation 105°C assumed.

User accessible area:
- material is metal: 70°C
- material is plastic: 95°C

4.6	**TABLE: enclosure opening**	N/A

Location	Size (mm)	Comments
--	--	--

Note(s): --

5.1	**TABLE: Touch current measurement**	N/A

Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
--	--	--	--
supplementary information: --			

5.2	**TABLE: electric strength tests, impulse tests and voltage surge tests**	N/A

Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:			
--	--	--	--
Reinforced:			
--	--	--	--
--			

IEC60950_1B			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**						N/A
	ambient temperature (°C)				--		—
	model/type of power supply				--		—
	manufacturer of power supply				--		—
	rated markings of power supply				--		—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
--	--	--	--	--	--	--	

supplementary information:--

(COMPONENT FAILURE TEST; ABNORMAL OPERATION TEST; TRANSFORMER ABNORMAL OPERATION TEST) Result Abbreviations:
NT - Tissue paper remained intact.
CT - Constant Temperature Obtained.
B - Circuit measures 0 Volts

National Differences

EUROPEAN

* No National Differences Declared
** Only Group Difference

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –

Part 1: General requirements

Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010/A12:2011
Attachment Form No.....:	EU_GD_IEC60950_1B_II
Attachment Originator.....:	SGS Fimko Ltd
Master Attachment.....:	Date 2011-08

EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		Pass
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		Pass
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		Pass
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		N/A
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A
2.7.1	Replace the subclause as follows:		Pass

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		Pass
2.7.2	This subclause has been declared ‘void’.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a] | Over 6 up to and including 10| (0,75) [b] 1,0 | Over 10 up to and including 16| (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a]. In NOTE 1, applicable to Table 3B, delete the second sentence.		N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A		N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation). Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		—

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		—

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag” In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A

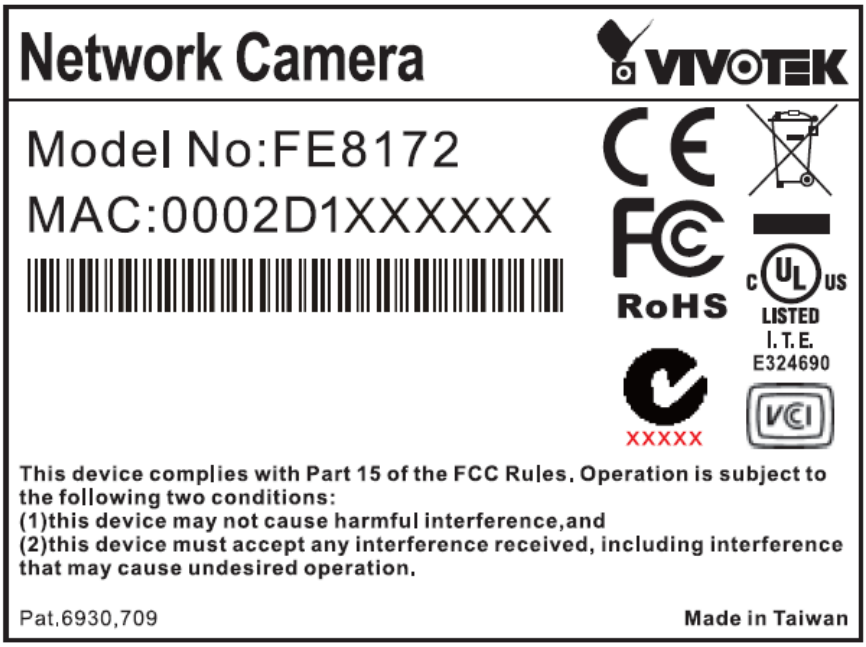
IEC60950_1B - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

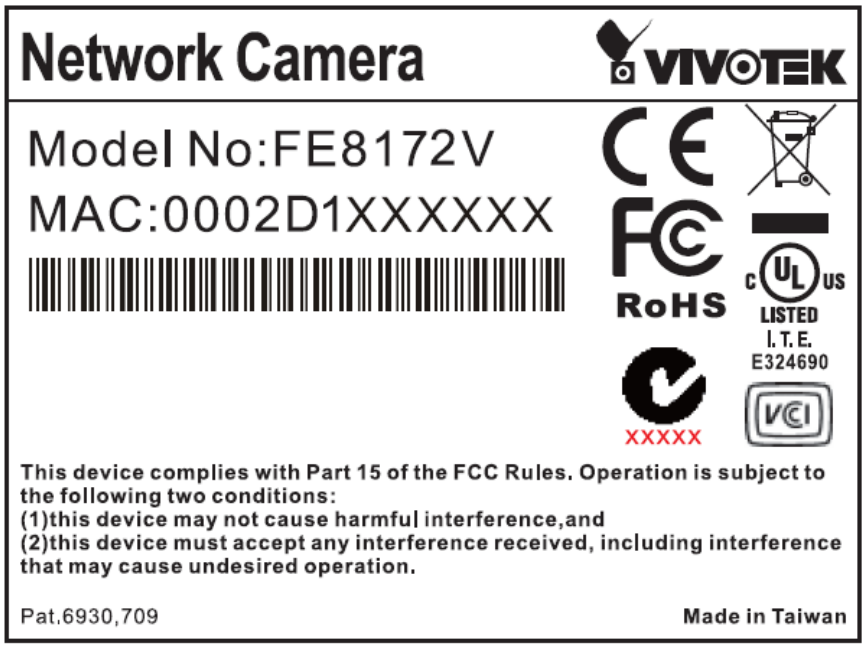
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		N/A

Enclosures

Type	Supplement Id	Description
Marking Plate	13-01	Label
Photographs	3-01	Overall Views (for model FE8172)
Photographs	3-02	Overall Views (for model FE8172V)
Photographs	3-03	Internal Views (for model FE8172)
Photographs	3-04	Internal Views (for model FE8172V)
Photographs	3-05	Connector View
Photographs	3-06	Mainboard Views
Photographs	3-07	Wall mount or Ceiling mount Bracket for Model FE8172V
Diagrams	4-01	Enclosure dimension drawing (for model FE8172)
Diagrams	4-02	Enclosure dimension drawing (for model FE8172V)
Diagrams	4-03	Wall Mount dimension drawing
Diagrams	4-04	O-ring Drawing (between Pastic Lens and Enclosure)
Diagrams	4-05	O-ring Drawing (between Upper Enclosure and bottom Enclosure)
Diagrams	4-06	POE Transformer Spec
Schematics + PWB		
Manuals		
Miscellaneous	7-01	Wiring Harness drawing
Miscellaneous	7-02	Letter Report for IP66 Evaluation on Network Camera, Model FE8172V (Data Refer to Model FE8171V, LVD CoC No.T1107110-158)

Marking Plate ID 13-01





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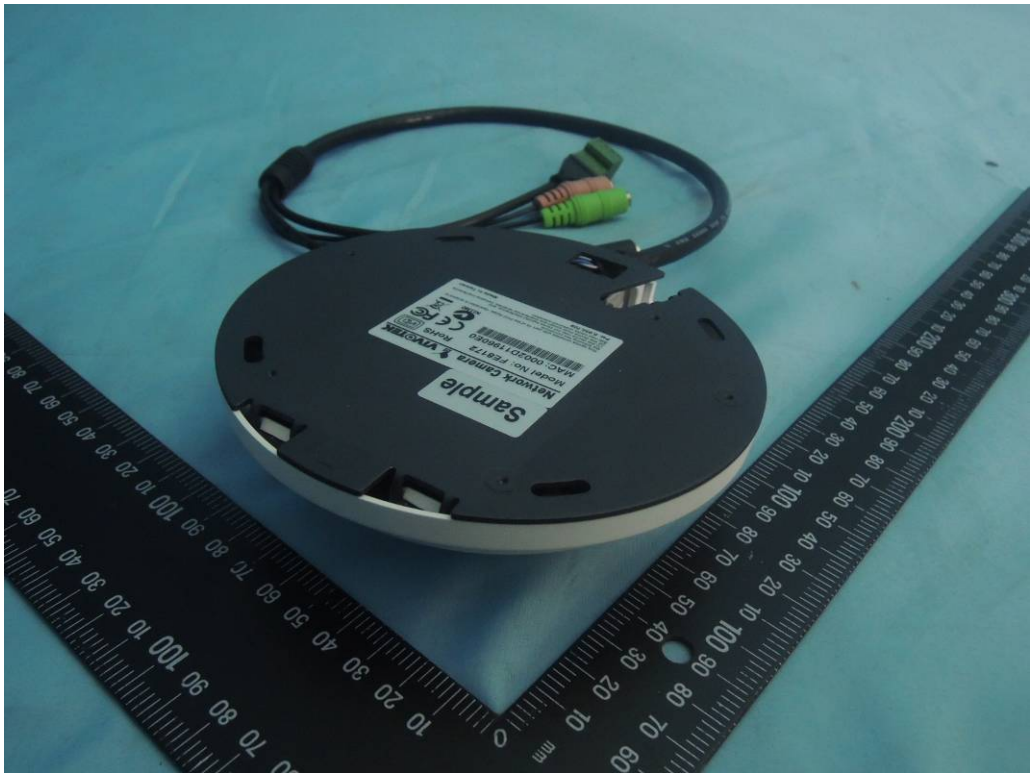

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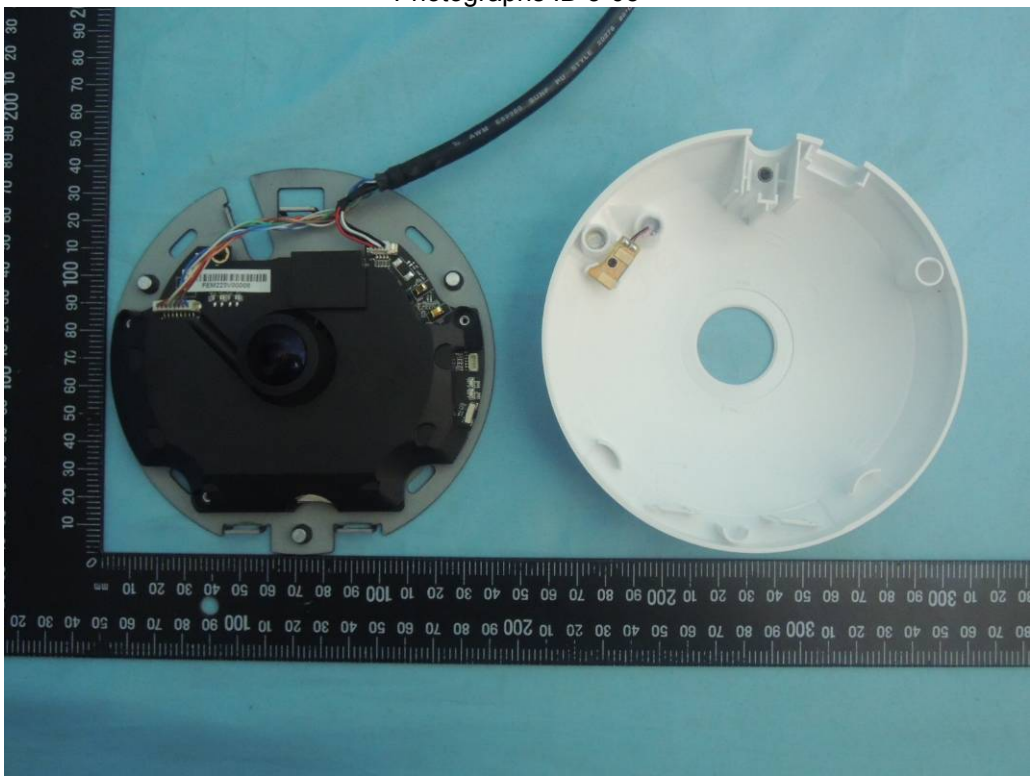

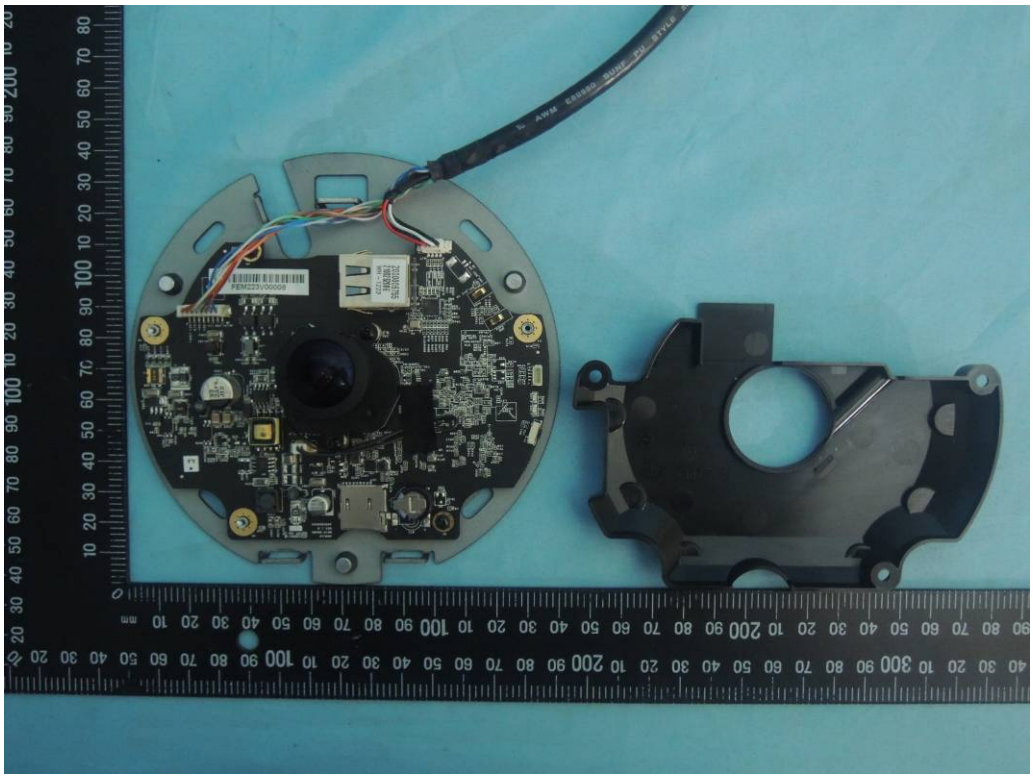

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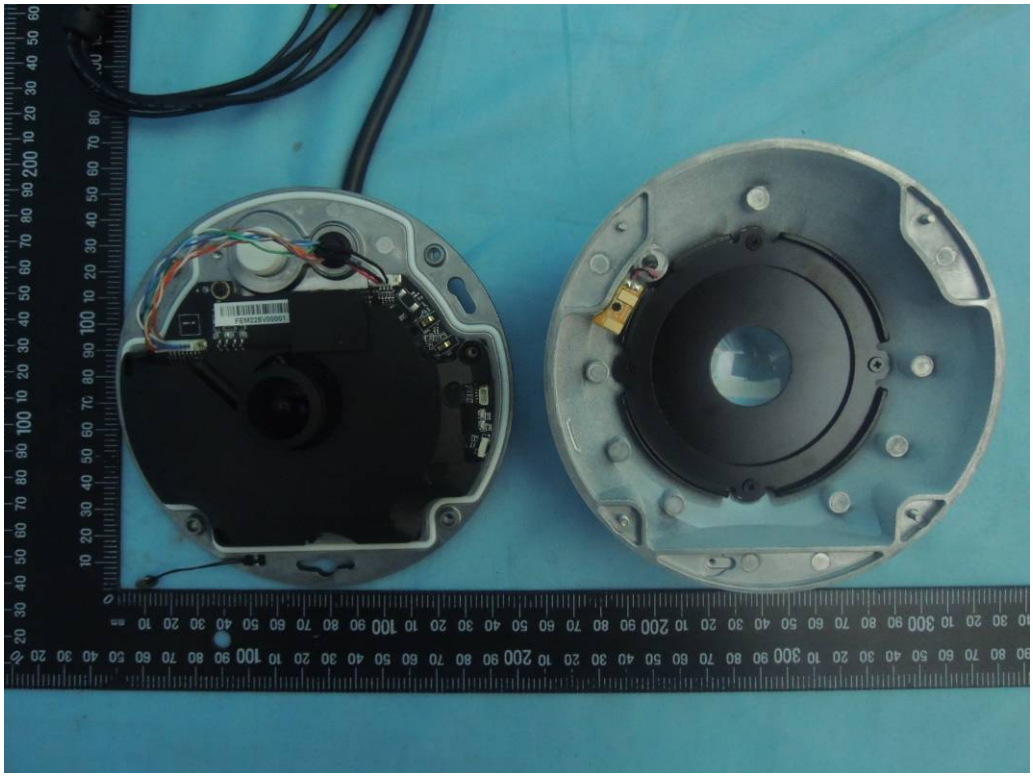

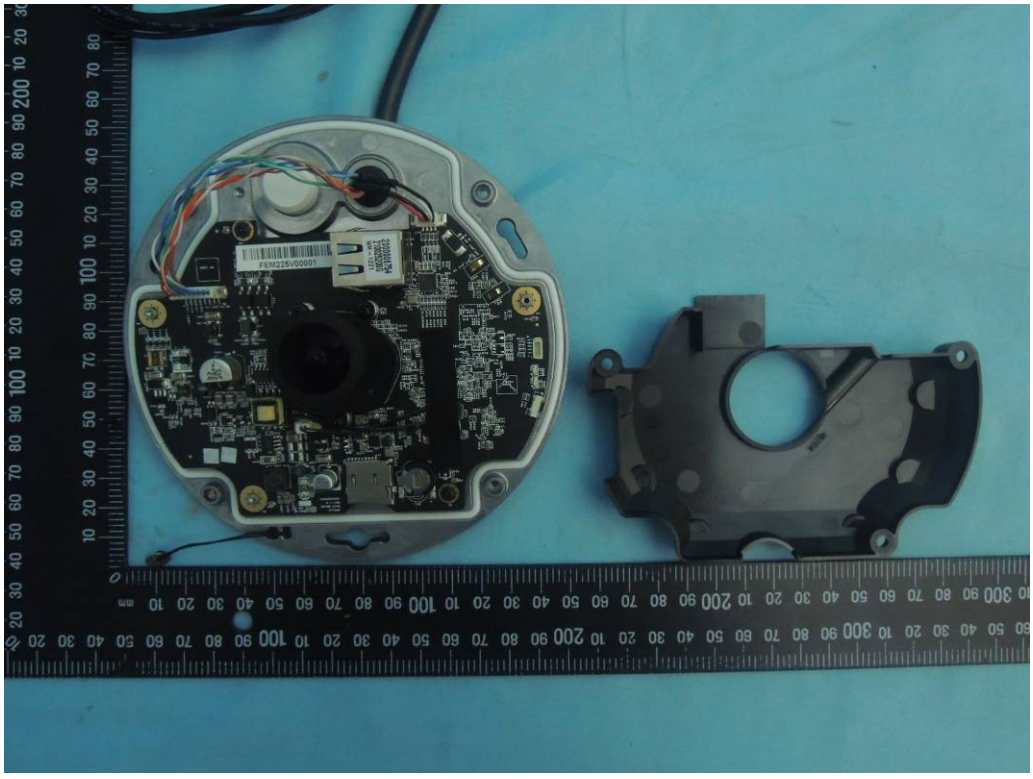

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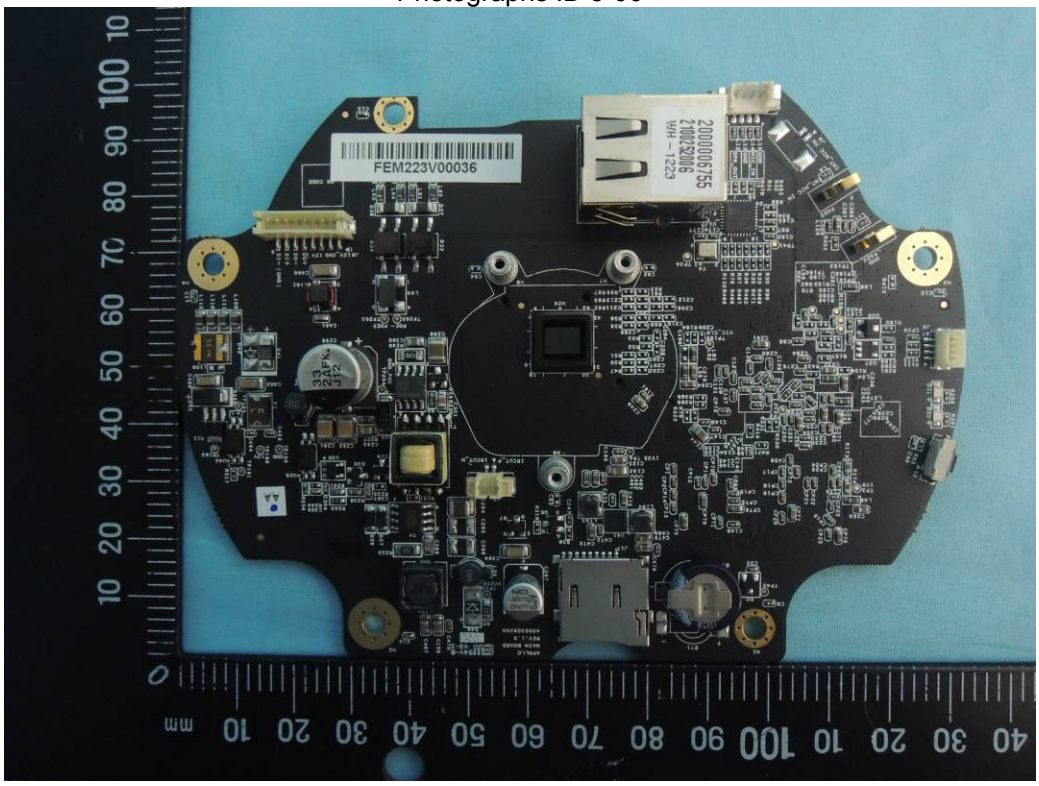
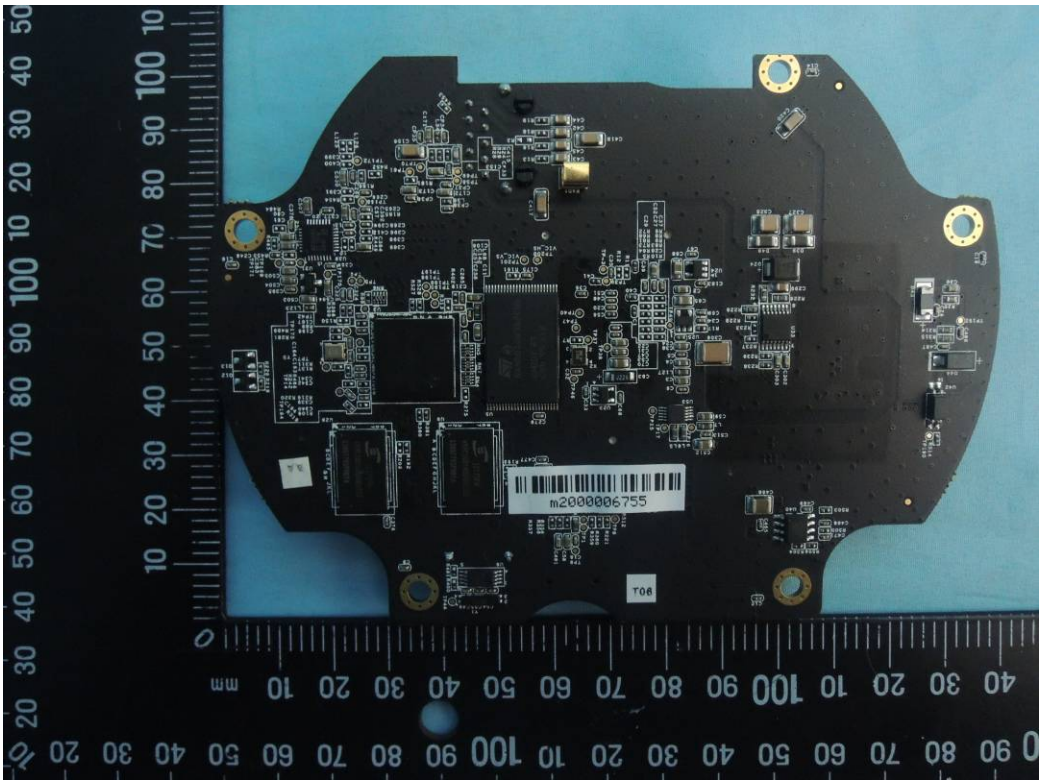
Photographs ID 3-06





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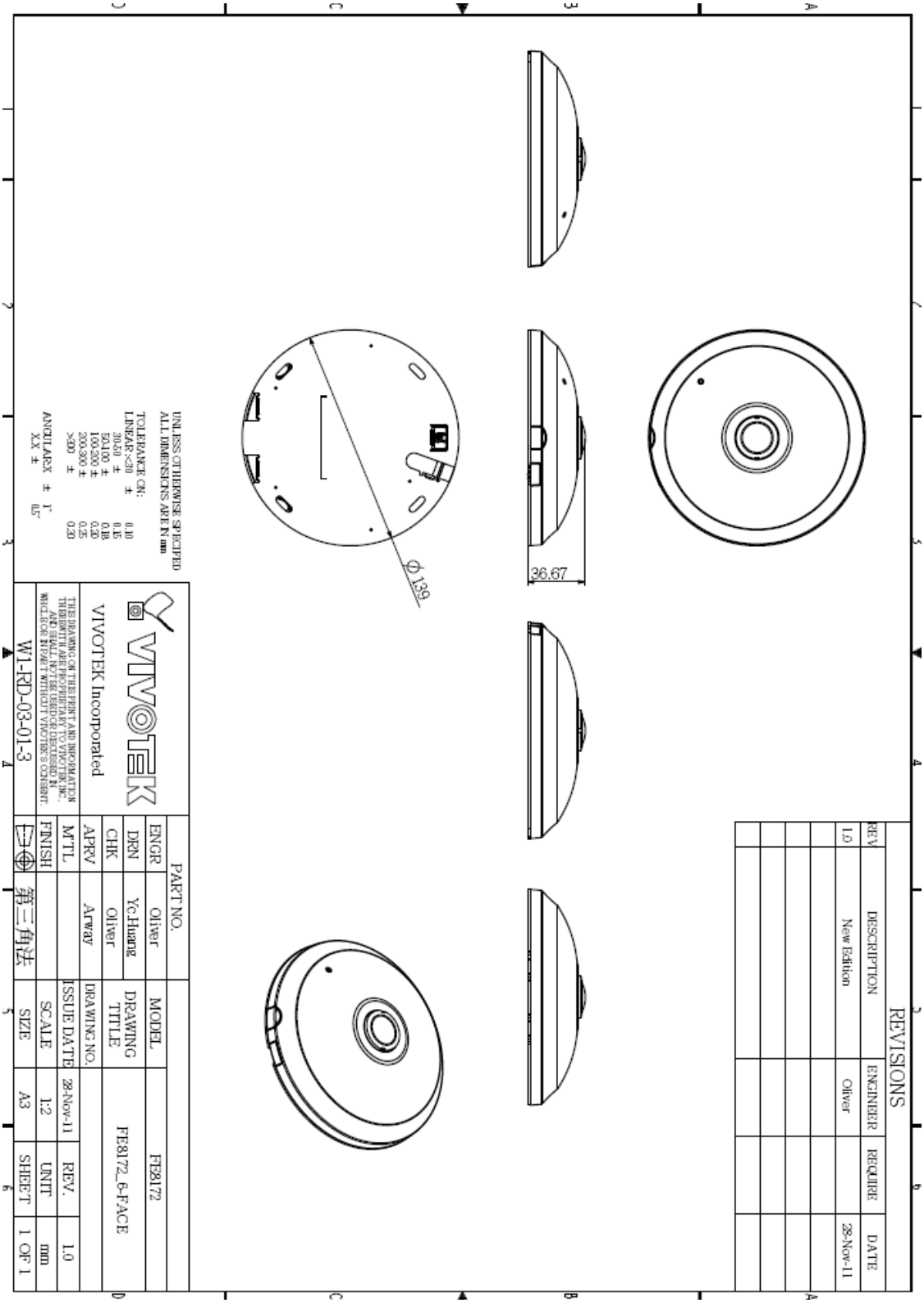

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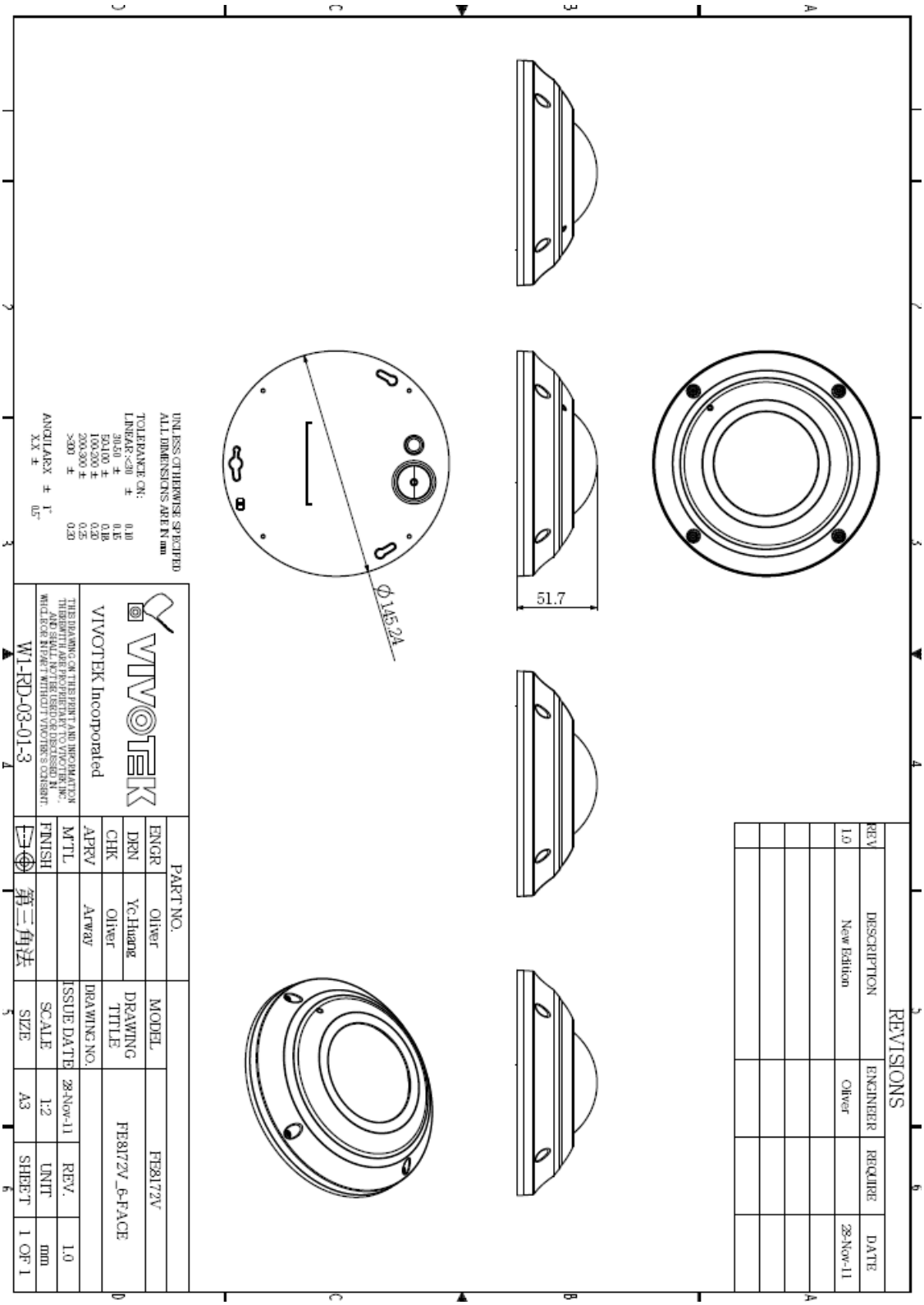

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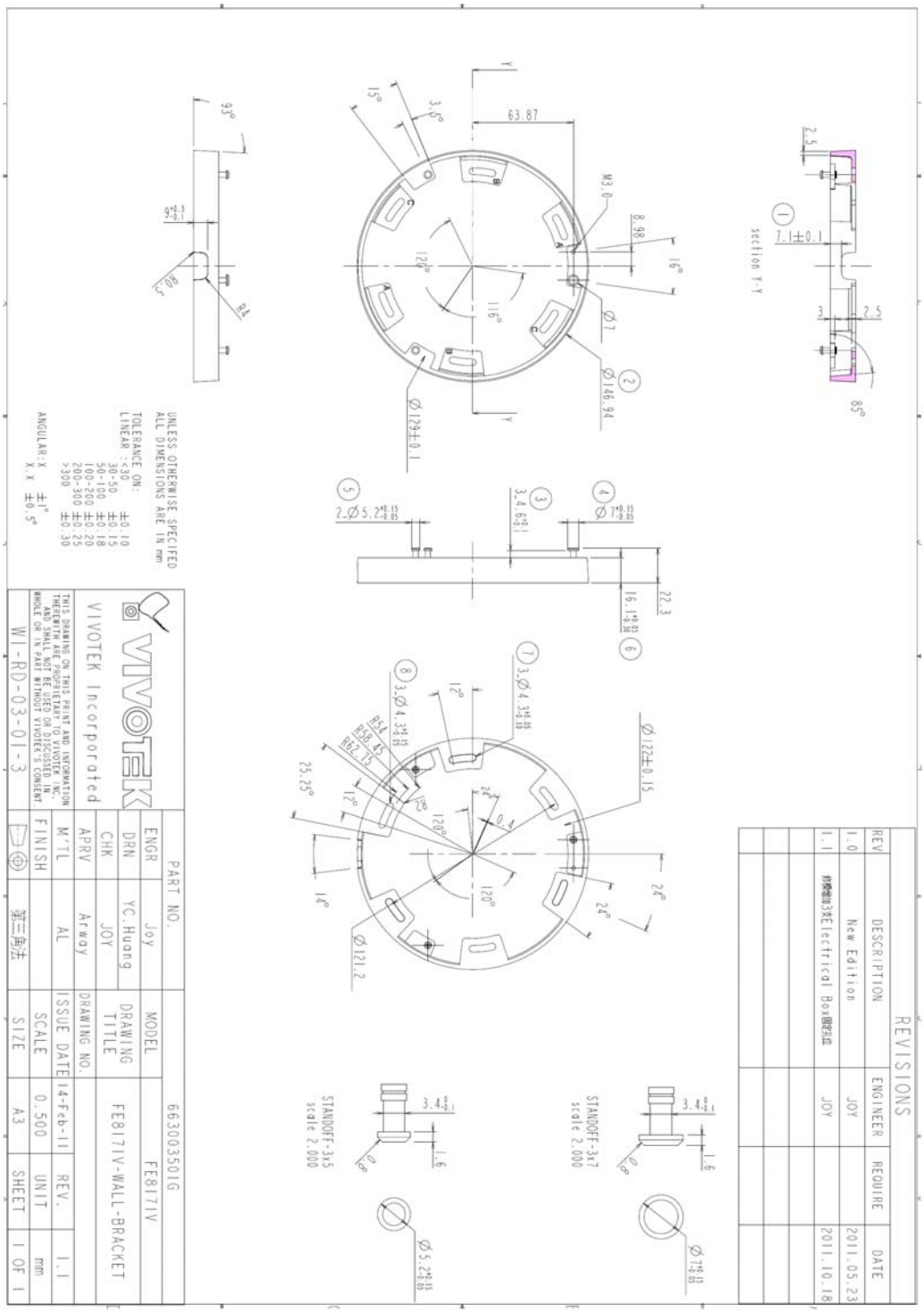

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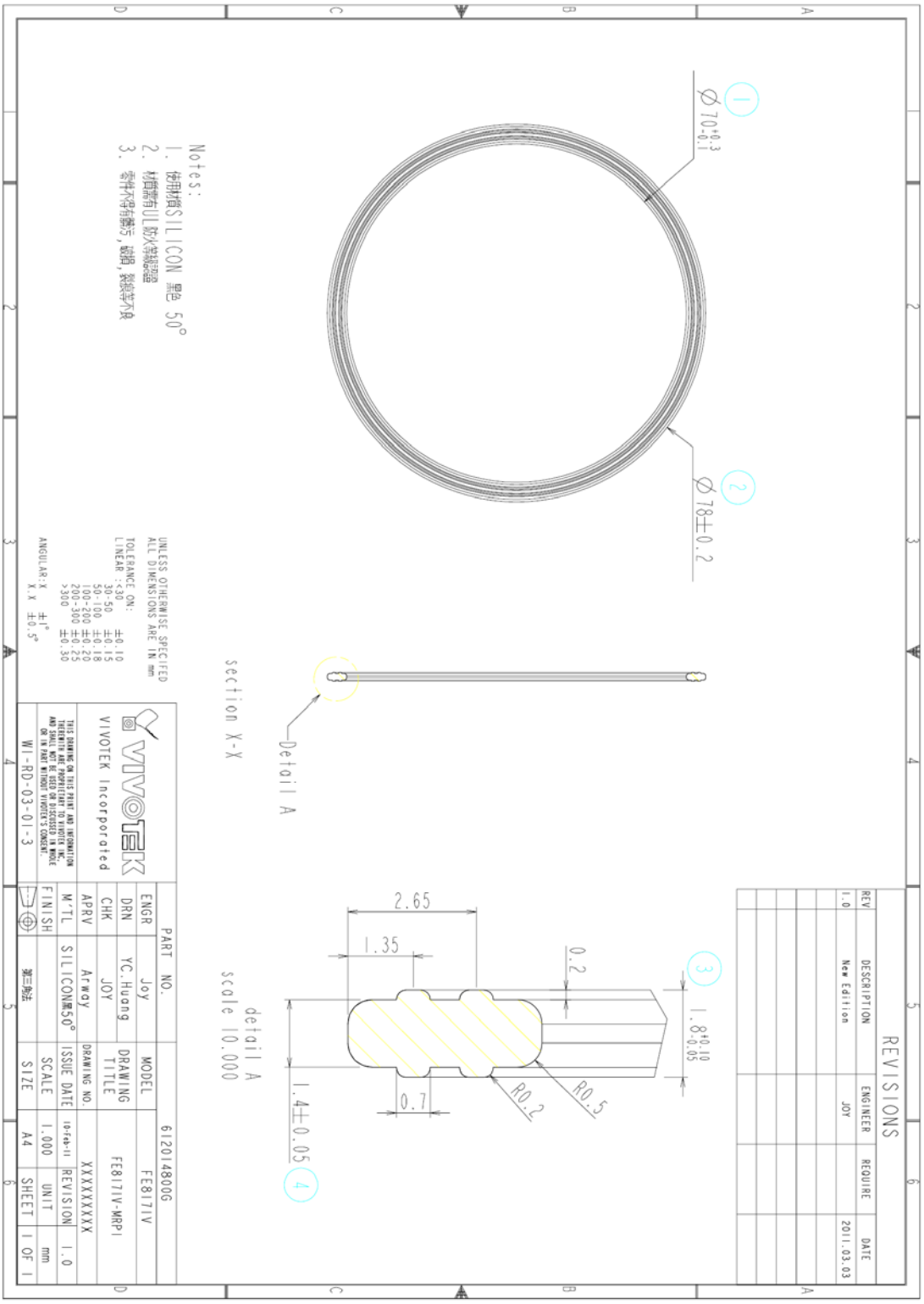

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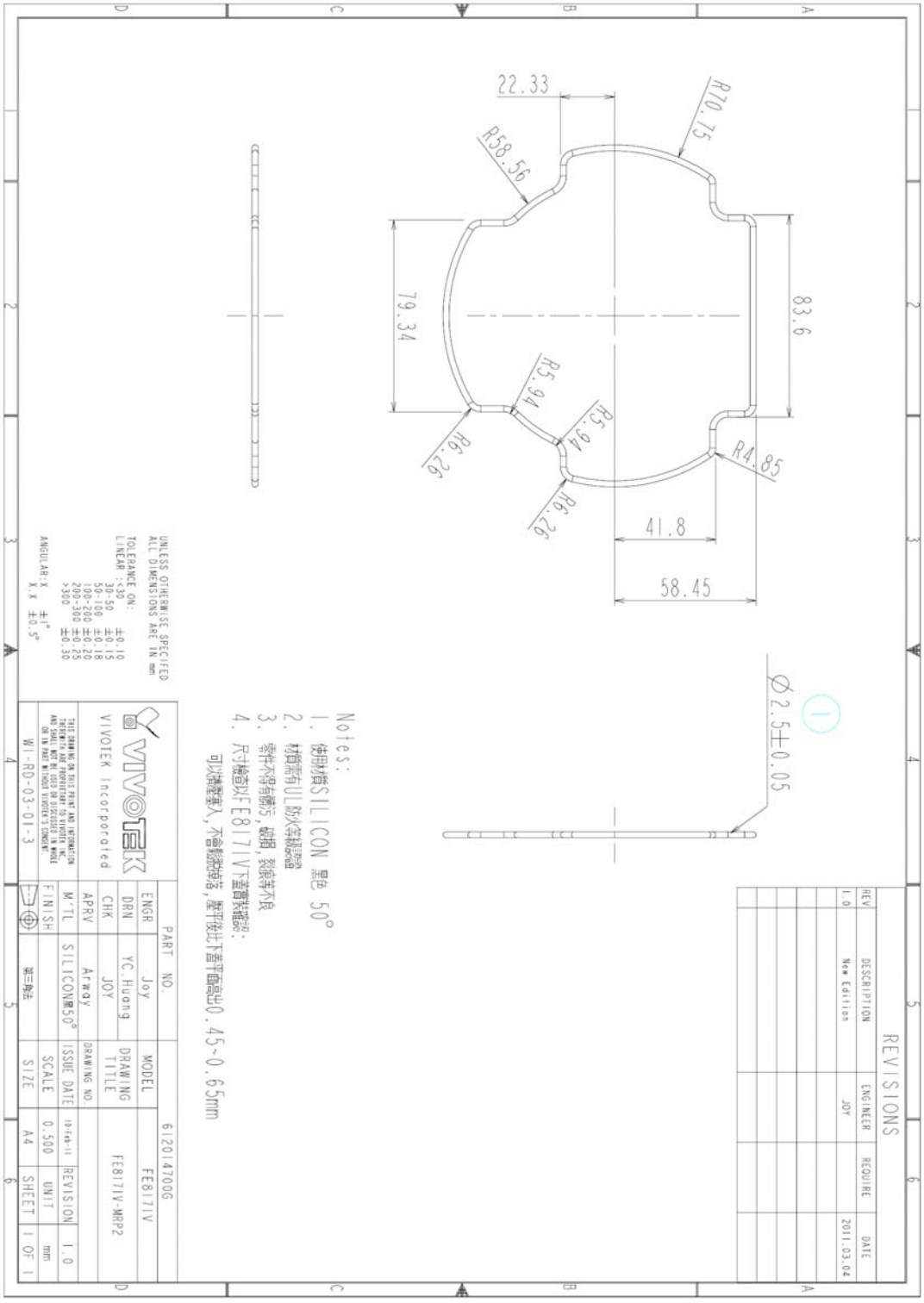

ATC 碩哲科技股份有限公司
ACROPARTS TECHNOLOGY CO.,LTD.
ISO9001

RoHS 危害物質限用

產品承認書/規格書

MESSRS : 晶睿通訊股份有限公司

Product Specification/Approval Sheet

CUS P/NO :

ATC P/NO : TSAB1308-251KA

REVISION : AC1

DATE : DEC.28.2011 QUANTITY : 2 PCS

本承認書內容若貴公司確認無誤，懇請於下方承認欄內簽章寄回

Plcasc confirm your acceptance of this approval sheet by return fax.

Cust PT/NO :

記入貴司P/NO及簽章後回傳,以便我司存檔複查!

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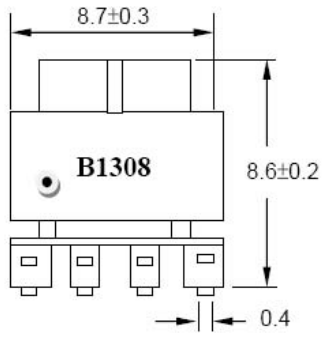
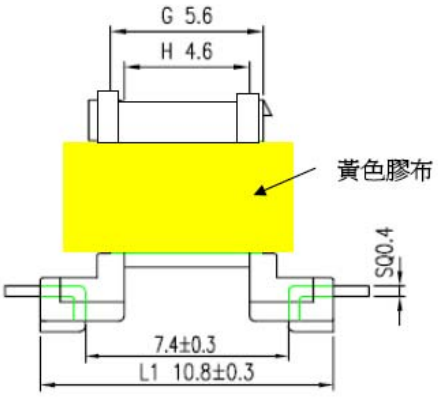
供應商承認章	業務負責人
ACROPARTS TECHNOLOGY CO.,LTD. 碩哲科技股份有限公司 承認章	碩哲科技股份有限公司 營業經理 葉任鈞

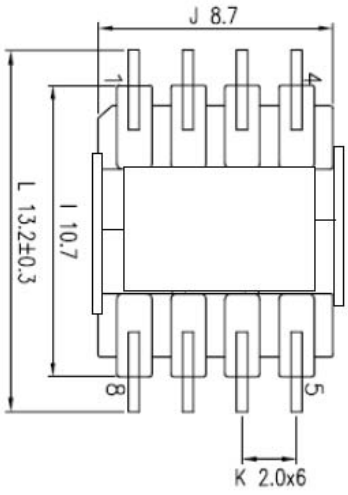
Diagrams ID 4-06

CUSTOMER :	晶睿通訊	DWG NO.:	
PART NO.:	TSAB1308-251KA	REV. / PAGES	AC1 / 02
DESCRIPTION	X'FORMER	DATE :	2011/12/28

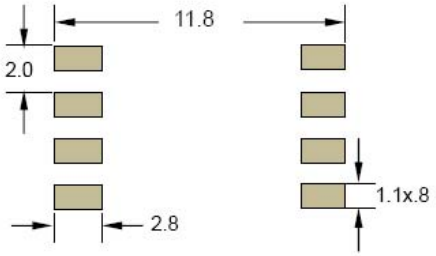
1. DIMENSIONS REQUIREMENTS : Unit (mm) ± 0.25 mm







(BOTTOM VIEW)



(PCB PAD LAYOUT)

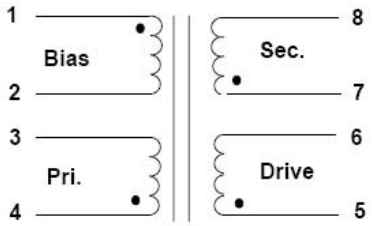
Note :

1. EPOXY 點中柱.
2. 3M, 1350Y,黃色膠布

Diagrams ID 4-06

CUSTOMER :	晶睿通訊	DWG NO.:	
PART NO.:	TSAB1308-251KA	REV. / PAGES	AC1 / 03
DESCRIPTION	X'FORMER	DATE :	2011/12/28

2. SCHEMATIC :



3. ELECTRICAL SPECIFICATION :

3.1) DC RESISTANCE :

4 – 3 = 1.5Ω Ref, 7 – 8 = 50 mΩ Ref.

1 – 2 = 0.6Ω Ref , 5 - 6 = 180 mΩ Ref

3.2) INDUCTANCE : @ 10KHz, 100mVAC

4 – 3 = 250uH ± 10%

3.3) LEAKAGE INDUCTANCE : @ 100KHz, 100mVAC,short (5,6,7&8)

4 – 3 = 9.5uH Max

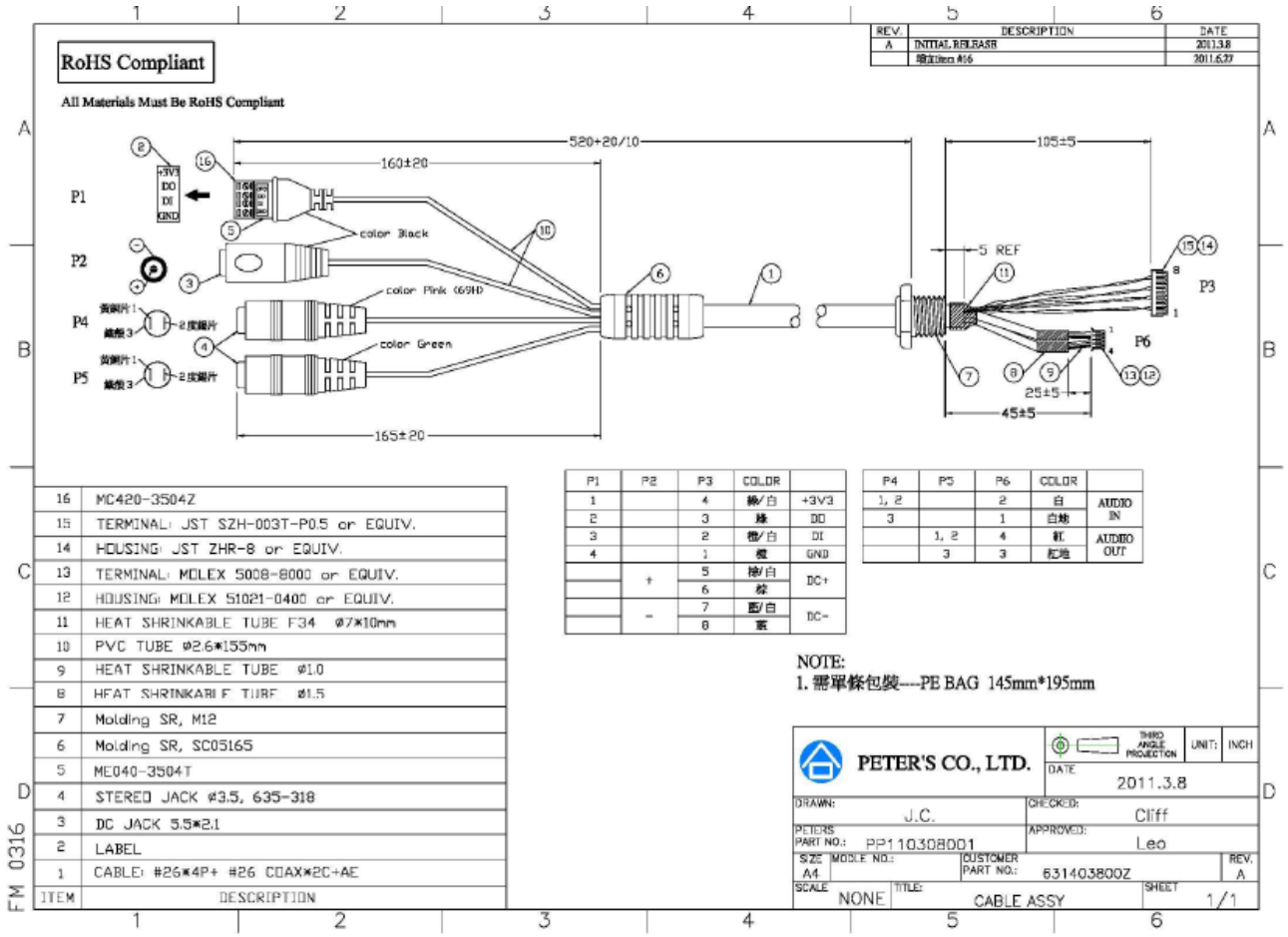
3.4) TURN RATIONS :

4 – 3 : 1 – 2 : 5 – 6 : 7 – 8 = 1 : 0.26 :0.06 : 0.10

4. MATERIAL LIST :

NO.	MATERIAL	SUPPLIER	UL No.
WIRE	POLYURETHANE ENAMELED WIRE	JUNG SHING WIRE CO., LTD	
BOBBIN	PM-9630	SUNITOMO BAKELITE CO., LTD	
CORE	FERRITE CORE	ACME P4 NICERA NC2H	
INSULATION TAPE	POLYESTER FILM	3M#1350Y	E17385(N)
SOLDER	B67	KU PING ENTERPRISE CO., LTD	

Miscellaneous ID 7-01



ITEM	DESCRIPTION
16	MC420-3504Z
15	TERMINAL: JST SZH-003T-P0.5 or EQUIV.
14	HOUSING: JST ZHR-8 or EQUIV.
13	TERMINAL: MOLEX 5008-8000 or EQUIV.
12	HOUSING: MOLEX 51021-0400 or EQUIV.
11	HEAT SHRINKABLE TUBE F34 ø7*10mm
10	PVC TUBE ø2.6*155mm
9	HEAT SHRINKABLE TUBE ø1.0
8	HEAT SHRINKABLE TUBE ø1.5
7	Molding SR, M12
6	Molding SR, SC05165
5	ME040-3504T
4	STEREO JACK ø3.5, 635-318
3	DC JACK 5.5*2.1
2	LABEL
1	CABLE: #26*4P+ #26 COAX*2C+AE

P1	P2	P3	COLOR	
1		4	綠/白	+3V3
2		3	綠	DO
3		2	橙/白	DI
4		1	橙	GND
	+	5	棕/白	DC+
		6	棕	
	-	7	藍/白	DC-
		8	藍	

P4	P5	P6	COLOR	
1, 2		2	白	AUDIO IN
3		1	白綠	
	1, 2	4	紅	AUDIO OUT
	3	3	紅綠	

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TEST REPORT

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Date: May 18, 2011

VIVOTEK INC.
6F, NO. 192, LIEN-CHENG RD.,
CHUNG-HO, NEW TAIPEI CITY,
TAIWAN, R.O.C.

The following merchandise was submitted and identified by the vendor as:

Product Description:	Network Camera
Style/ Item No.:	FE8171V/ No.1
Manufacturer/ Vendor:	VIVOTEK INC.
Country of Origin:	Taiwan
Quantity:	Total 1 piece
Testing Period:	May 9, 2011 to May 11, 2011

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Required: (According to client's test specification, please see following sheets in detail.)

Test for Degrees of Protection Provided by Enclosures

IP Code	IP66
First characteristic numeral	Degrees of protection against access to hazardous parts and against solid foreign objects
Second characteristic numeral	Degrees of protection against ingress of water

Test Results:

Conclusion
Submittals sample(s) comply with the requirement and acceptance conditions of IEC 60529 Edition 2.1: 2001-02 Degrees of Protection Provided by Enclosures -- IP66 The detailed description of test result, please see attached sheet(s).

Signed for and on behalf of SGS TAIWAN Ltd.

Terence Hsieh
Department Manager

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Test for Degrees of Protection Provided by Enclosures:

Test Equipment:

Name	Brand	Model	Serial No.
Dust-proof Object Test Probe	ED&D	TRP-02	B0050180
Digital Force Gauge	ALGOL	HF-50	HF-106764
Dust Tester	T-MACHINE	TMJ-9723C	T-23-050411
IPX6 Water Jet Hose Nozzle Set	PTL	P03.28	5040045

Lab Environmental Conditions:

Ambient temperature: 25±3℃
Relative humidity: 55±20%RH

Test Method/ Specification:

Test method: According to IEC 60529 Edition 2.1: 2001-02--IP66

1. Test for protection against access to hazardous parts:

Test method: IEC 60529 Edition 2.1: 2001-02--IP6X
The test wire with 1.0 mm in diameter and 100 mm long is pushed against or inserted through any openings of the enclosure with the force specified in Table 6 in IEC 60529 Edition 2.1: 2001-02. Examine whether the test wire touches the hazardous live parts inside the enclosure or not.

Test force: 1 N±10 %

2. Test for protection against solid foreign objects:

Test method: IEC 60529 Edition 2.1: 2001-02--IP6X (Dust test)
Type of dust: Talcum powder
The amount of dust: 2 kg
The chamber size: 1 m^3
The maximum depression: -20 mbar
Test duration: 8 hours

- Examine the protection against ingress dust of specimen(s) after this test.

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Test Method/ Specification--Continued:

3. Test for protection against water:

Test method:	According to IEC 60529 Edition 2.1: 2001-02--IPX6
Test means:	Spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as specified in test standard.
Internal diameter of the nozzle:	12.5 mm
Delivery rate:	100 ℓ/min ±5%
Distance from nozzle to enclosure surface:	between 2.5 m and 3 m
Core of the substantial stream:	circle of approximately 120 mm diameter at 2.5 m distance from nozzle
Test duration:	3 minutes

- Examine the protection against ingress water of specimen(s) after this test.

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Specimen:

Style/ Item No.: FE8171V/ No.1
Quantity: Total 1 piece

Test Result:

A. Degrees of protection against access to hazardous parts and against solid foreign objects (IP6X)

A-1 Test for protection against access to hazardous parts (IP6X)

Test Result		
Check Item		Style/ Item No.
		FE8171V/ No.1
1	Does the test wire penetrate any openings of the enclosure?	No
2	(followed check item 1) If the test wire penetrates any openings of the enclosure, does the test wire touch any hazardous live parts or any hazardous mechanical parts?	N/A
3	(followed check item 2) Does adequate clearance be kept between the test wire and hazardous live parts or hazardous mechanical parts?	N/A
Note 1: N/A means "Not Applicable". Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60529 Edition 2.1: 2001-02 and in accordance with the acceptance conditions specified by client.		

A-2 Test for protection against solid foreign objects (IP6X)

Test Result		
Check Item		Style/ Item No.
		FE8171V/ No.1
1	Does any dust deposit inside the enclosure at the end of the test?	No
Note 1: N/A means "Not Applicable". Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60529 Edition 2.1: 2001-02 and in accordance with the acceptance conditions specified by client.		

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Test Result--Continued:

B. Degree of protection against ingress of water (IPX6)

Test Result		
Check Item		Style/ Item No.
		FE8171V/ No.1
1	Does any water permeate into the specimen?	No
2	(followed check item 1) If any water has entered, does the water accumulate near the cable end or live parts?	N/A
2.1	(followed check item 2) Does the water be sufficient to interfere with the correct operation of the equipment or impair safety?	N/A
2.2	(followed check item 2.1) Does the water deposit on insulation parts where it could lead to tracking along the creepage distances?	N/A
2.3	(followed check item 2.2) Does the water reach live parts or windings not designed to operate when wet?	N/A
Note 1: N/A means "Not Applicable". Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60529 Edition 2.1: 2001-02 and in accordance with the acceptance conditions specified by client.		

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Test Photos:

1. Appearance of specimen (FE8171V)

2. Test for protection against access to hazardous parts

3. Test for protection against access to hazardous parts

4. Test for protection against solid foreign objects (Dust test)

5. Test for protection against solid foreign objects (Dust test)

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Test Photos--Continued:

6. Test for protection against water

7. Test for protection against water

— — — **The End of Test Report** — — —

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